

**REPORT ON THE CONSERVATION STATUS OF
TOFIELDIA GLUTINOSA VAR. *ABSONA***

by

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TOFIELDIA GLUTINOSA VAR. *ABSONA***

Taxon Name:	<i>Tofieldia glutinosa</i> (Michaux) Persoon var. <i>absona</i> (Hitchcock) Davis
Common Name:	Out-of-tune sticky tofieldia
Family:	Liliaceae
States Where Taxon Occurs:	U.S.A.; Idaho
Current Federal Status:	Category 2 Candidate
Recommended Federal Status:	Category 3b Candidate
Author of Report:	Robert J. Bursik and Robert K. Moseley
Original Date of Report:	May 20, 1995
Date of Most Recent Revision:	N/A
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SUMMARY

Tofieldia glutinosa var. *absona* (out-of-tune sticky tofieldia) has been an enigma for rare plant conservation in Idaho for many years. It was originally described from two collections, taken somewhere around Priest Lake at the turn of the century. Other specimens from high elevation peatlands in central Idaho have been identified as var. *absona*, but these later proved to be misidentifications. Despite comprehensive peatland inventories in the Priest River Valley by the CDC, the location(s) of the turn-of-the-century collections remained a mystery until 1993, when Rob Bursik discovered one plant in a fen at the northern end of Priest Lake. We conducted field inventories in 1994, and found no new populations, and reviewed nearly 100 herbarium specimens of *Tofieldia glutinosa* from Idaho as part of this status survey.

We learned in April 1995, however, that a new taxonomic treatment of the genus in North America has fundamentally changed the status of *Tofieldia glutinosa* var. *absona*. John Packer, University of Alberta, has prepared a treatment of the genus for a forthcoming volume of the *Flora of North America* and submerged var. *absona* with a widespread variety, now called *Triantha occidentalis* ssp. *brevistyla*. This latter taxon is not of conservation concern globally, although it is locally rare in Idaho. We recommend that *Tofieldia glutinosa* var. *absona* no longer be considered a active candidate for listing and be moved from category 2 to category 3b, a category used for taxonomically questionable entities.

TABLE OF CONTENTS

Title Page	i
Summary	ii
Table of Contents	iii
I. Species Information	
1. Classification and nomenclature	1
2. Present legal or other formal status	3
3. Description	3
4. Significance	3
5. Geographical distribution	4
6. General environment and habitat description	4
7. Population biology	4
8. Population ecology	4
9. Current land ownership and management responsibility	4
10. Management practices and experience	4
11. Evidence of threats to survival	4
II. Assessment and Recommendations	
12. General assessment of vigor, trends, and status	4
13. Priority for listing or status change	4
14. Recommended critical habitat	5
15. Conservation/recovery recommendations	5
16. Interested parties	5
III. Information Sources	
17. Sources of information	6
18. Summary of materials on file	8
IV. Authorship	
19. Initial authorship	8
20. Maintenance of status report	8
V. New Information	
21. Record of revisions	9

I. SPECIES INFORMATION

1. Classification and nomenclature.

A. Species.

1. Scientific name.

a. **Trinomial:** *Tofieldia glutinosa* (Michaux) Persoon var. *absona* (Hitchcock) Davis

b. **Full bibliographic citation:** Hitchcock, C.L. 1944. The *Tofieldia glutinosa* complex of western North America. *American Midland Naturalist* 31: 487-498.

c. **Type specimen:** Priest Lake, Idaho, August, 1901, *C.V. Piper 3724* (NY, GH).

2. **Pertinent synonyms:** *Tofieldia glutinosa* (Michaux) Persoon ssp. *absona* Hitchcock, and see discussion of the current taxonomic treatment, below.

3. **Common name:** Out-of-tune sticky tofieldia.

4. **Taxon codes:** PMLIL1Y031 (The Nature Conservancy and the Natural Heritage network).

5. **Size of genus:** *Tofieldia* contains about 15 species (Hitchcock 1969; but see Packer 1993; see discussion below).

B. Family classification.

1. **Family name:** Liliaceae.

2. **Pertinent family synonyms:** None.

3. **Common names for family:** Lily.

C. Major plant group: Monocotyledoneae.

D. History of knowledge of taxon: C.V. Piper first collected it from the Priest Lake area of Idaho in August, 1901. The only location information given on his label was "Priest Lake." Subsequent efforts to more precisely pin-point the collection location from Piper's field notes have proved fruitless. It was also collected in the Priest Lake vicinity, by MacDougal (Hitchcock 1944), not long after the Piper collection, at "Minard's Bay, Priest Lake, Idaho" (the exact date of this collection is unavailable). Efforts to find Minard's Bay, which was perhaps named for the occupant of the bay at the time of collection, have also failed. Bursik found a single plant of *Tofieldia glutinosa* var. *absona* while doing plant surveys in Mosquito Bay Fen in 1993. No collection was made because

only a single plant could be located. Field surveys for *Tofieldia glutinosa* var. *absona* during 1994 focused on peatlands in the vicinity of Priest Lake, Idaho, harboring similar habitat to that found at Mosquito Bay Fen. No additional populations were found, however.

Several collections of *Tofieldia glutinosa* from Valley and Idaho counties have been misidentified as variety *absona* at various times (Packard n.d., Johnson 1981; Atwood and Charlesworth 1987).

All this is now moot, given the taxonomic revision that has taken place in the last couple of years. See discussion below.

E. Comments on current alternative taxonomic treatments: Hitchcock (1944), in his study of the variation within the *Tofieldia glutinosa*/*Tofieldia occidentalis* complex in western North America, identified five geographic variants that were distinct from one another based on several morphological characteristics. He listed his taxonomic treatment options as follows:

1. Recognize all five as distinct species.
2. Recognize two species: *Tofieldia glutinosa* (including two variants as subspecies) and *T. occidentalis* (with three subspecies).
3. Recognize each as a subspecies under a single species.

Hitchcock (1944) decided on the third option, recognizing the five entities as subspecies of *Tofieldia glutinosa*: *occidentalis*, *brevistyla*, *absona*, *montana*, and *glutinosa*. It should also be noted that by the time Part 1 of *Vascular Plants of the Pacific Northwest* (Hitchcock 1969) was published, Hitchcock had decided to call these five taxonomic entities "varieties" rather than "subspecies".

Packer (1993), in his treatment of this group for the *Flora of North America*, looked at the prevailing treatment for the genus *Tofieldia* and found that it consisted of two distinct groups of species. The first group included *T. coccinea* Richardson, *T. glabra* Nuttall, and *T. pusilla* (Michaux) Persoon, which, as a group, are glabrous with appendageless seeds and flowers arising singly. The second group is more homogeneous and includes *Tofieldia glutinosa* (Michaux) Persoon, *T. occidentalis* S. Watson (which Hitchcock [1944] had combined with *T. glutinosa*), and *T. racemosa* (Walter) Britton, which are characterized by glandular stem pubescence, appendaged seeds, and clustered flowers. Packer (1993) segregated the two groups into separate genera with the former group of three species retaining the name *Tofieldia*, and the latter group being treated as *Triantha*, a distinct genus based on a section of *Tofieldia* recognized by Nuttall (1818), but largely disregarded since, with the exception of Small (1903). One additional species of *Triantha*, *T. japonica*, is not found in North America.

Packer (1993) decided that the more appropriate option laid out by Hitchcock (1944), regarding *Triantha* in western North America, was his second. That being to recognize two species: *Triantha glutinosa*, which includes only *glutinosa* of the original five subspecies; and *Triantha occidentalis*, which includes the other four subspecies proposed by Hitchcock (1944): *absona*, *brevistyla*, *montana*, and *occidentalis*. These two species are differentiated based on stem pubescence (conical glands in *T. glutinosa* versus more or less cylindrical hairs in *T. occidentalis*) and the nature of the testa surrounding the mature seeds (more or less tightly appressed to the body of the seed in *T. glutinosa* versus loose, white, spongy, and inflated around the body of the seed in *T. occidentalis*).

Furthermore, the four Hitchcock (1944) subspecies that Packer (1993) included within *Triantha occidentalis* became only three subspecies, as follows:

T. occidentalis (S. Watson) Gates ssp. *brevistyla* (Hitchcock) Packer - includes Hitchcock's varieties *brevistyla* and *absona*. In John Packer's view, variety *absona* is not significantly different from variety *brevistyla* and is included therein (Packer 1993; and personnel communication via telephone conversation, April 1995).

T. occidentalis (S. Watson) Gates ssp. *montana* (Hitchcock) Packer

T. occidentalis (S. Watson) Gates ssp. *occidentalis*

The importance of this taxonomic treatment relative to this status survey is that the taxon of conservation concern (*Tofieldia glutinosa* var. *absona* s.l.) became syntaxonomic with the wider-ranging *Triantha occidentalis* ssp. *brevistyla*, which is not globally rare, although it is locally disjunct and rare in Idaho (Conservation Data Center 1994).

Hitchcock (1969) lists the range of *Triantha occidentalis* ssp. *brevistyla* (*Tofieldia glutinosa* var. *brevistyla* s.l.) as southern Alaska, Vancouver Island, mainland western British Columbia, south in the Olympic and Cascade Mountains to southern Oregon, and east to the Selkirk Mountains in southeastern British Columbia. To this can be now added northern and central Idaho.

We accept the taxonomic revision of *Tofieldia* s.l. by Packer (1993), which makes *Tofieldia glutinosa* var. *absona* no longer a valid taxon. It is therefore recommended that *Tofieldia glutinosa* var. *absona* s.l. no longer be considered a candidate for listing. Because of this, many of the following sections of the status survey report are not applicable.

2. **Present legal or other formal status.** Not applicable.
3. **Description.** Not applicable.
4. **Significance.** Not applicable.
5. **Geographic distribution.** Not applicable.

6. **General environment and habitat description.** Not applicable.
7. **Population biology of taxon.** Not applicable.
8. **Population ecology of taxon.** Not applicable.
9. **Current land ownership and management responsibility.** Not applicable.
10. **Management practices and experience.** Not applicable.
11. **Evidence of threats to survival.** Not applicable.

II. ASSESSMENTS AND RECOMMENDATIONS

12. General assessments of vigor, trends, and status: *Tofieldia glutinosa* var. *absona* s.l., which was thought to be endemic to the Priest Lake area of Idaho, has become syntaxonomic with the wider ranging *Triantha occidentalis* ssp. *brevistyla* in the most recent taxonomic treatment of this group (Packer 1993). Numerous populations of *Triantha occidentalis* ssp. *brevistyla* exist throughout its range in the northwestern North America, including British Columbia, Oregon, Washington, Alaska, and now Idaho, where it is considered rare.

13. Recommendations for listing or status change.

A. Recommendation to U.S. Fish and Wildlife Service: We accept the taxonomic revision of *Tofieldia* s.l. by Packer (1993), which makes *Tofieldia glutinosa* var. *absona* no longer a valid taxon. It is therefore recommended that *Tofieldia glutinosa* var. *absona* s.l. no longer be considered a candidate for listing and changed to a category 3b, indicating a taxonomic question. *Triantha occidentalis* ssp. *brevistyla* is not of global conservation concern.

B. Recommendations to other U.S. federal agencies.

1. U.S. Forest Service: *Tofieldia glutinosa* var. *absona* s.l. is currently on the sensitive list for Region 4 (Idaho) and is on the watch list for Region 1 (Idaho). Because it has become syntaxonomic with *Triantha occidentalis* ssp. *brevistyla*, *Tofieldia glutinosa* var. *absona* should be dropped from those lists.

Although *Triantha occidentalis* ssp. *brevistyla* is not of global or national conservation concern, it is rare and disjunct in Idaho from more continuous range in the north and along the Pacific Coast. Currently, there are seven occurrences for this taxon known in Idaho, from Valley, Clearwater, Idaho, Kootenai, and Bonner counties. It should be considered of conservation concern on the Payette, Clearwater, and Idaho Panhandle National Forests. [Note: The Payette National Forest locations for *Triantha occidentalis* ssp. *brevistyla* are different than those previously reported for *Tofieldia glutinosa* ssp. *absona*. See discussion below]

C. Other status recommendations.

1. Counties and local areas: None.

2. States.

a. Idaho: *Tofieldia glutinosa* var. *absona* should be dropped from consideration by the Idaho Native Plant Society and the Conservation Data Center. *Triantha occidentalis* ssp. *brevistyla* should remain on the state rare plant list of the Idaho Native Plant Society as a Priority 2 species (currently recognized as a Priority 1). We have changed the Heritage Network rank to S2 (currently S1).

3. Other nations: None.

4. International Trade Convention, etc.: None.

14. Recommended critical habitat. Not applicable.

15. Conservation/recovery recommendations. Not applicable.

16. Interested parties:

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3815 Schreiber Way
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Forest Supervisor
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III. INFORMATION SOURCES

17. Sources of information.

A. Publications.

1. References cited in report:

Atwood, D., and N. Charlesworth. 1987. Status report - *Tofieldia glutinosa* var. *absona*. Unpublished report on file at the U.S. Forest Service, Intermountain Region, Ogden, UT.

Conservation Data Center. 1994. Rare, threatened, and endangered plants and animals of Idaho. Third Edition. Idaho Department of Fish and Game, Boise, Idaho. 39 p.

Hitchcock, C.L. 1944. The *Tofieldia glutinosa* complex of western North America. *American Midland Naturalist* 31: 487-498.

Hitchcock, C.L. 1969. *Tofieldia*. Pages 804-806 *In: Vascular Plants of the Pacific Northwest - Part 1*, by C.L. Hitchcock, A. Cronquist, M. Ownbey, and J.W. Thompson, University Washington Press, Seattle, WA.

Johnson, F.D. 1981. *Tofieldia glutinosa* var. *absona*. Page 60 *In: Vascular Plant Species of Concern in Idaho*, by Rare and Endangered Plants Technical Committee of the Idaho Natural Areas Council, Bulletin No. 34, Forest, Wildlife and Range Experiment Station, University of Idaho, Moscow, ID.

Nuttall, T. 1818. The Genera of North American Plants. Philadelphia.

Packard, P.L. No date. Status report - *Tofieldia glutinosa* var. *absona*. Unpublished report on file at the Conservation Data Center, Idaho Department of Fish and Game, Boise, ID.

Packer, J.G. 1993. Two new combinations in *Triantha* (Liliaceae). *Novon* 3: 278-279.

Small, J.K. 1903. Flora of the Southeastern United States. (Published by the author) New York.

2. Other pertinent publications.

a. **Technical:** None.

b. **Popular:** None.

B. Museum collections: Prior to learning of taxonomic revisions within *Tofieldia* s.l. (Packer 1993), which made *Tofieldia glutinosa* var. *absona* no longer a valid taxon, specimens of *Tofieldia glutinosa* s.l. from the University of Idaho Herbarium were examined to determine whether any represented var. *absona*. Two were found to represent *Triantha occidentalis* ssp. *brevistyla*. The remaining 50 specimens represented *Triantha occidentalis* ssp. *montana* (*Tofieldia glutinosa* var. *montana* s.l.). Specimens of *Tofieldia glutinosa* s.l. from the Payette National Forest Herbarium, many of which were erroneously identified as var. *absona*, were also examined. All were found to represent *Triantha occidentalis* ssp. *montana*. The two specimens of *Tofieldia glutinosa* var. *absona* s.l. that were collected at Priest Lake near the turn of the century are housed at the New York Botanical Garden (NY) and Gray Herbarium (G). These specimens were unavailable to us, because they were on loan to the University of Alberta, where John Packer is using them for his treatment of *Tofieldia/Triantha* for the *Flora of North America* (Packer 1993).

C. Fieldwork. Portions of June and July, 1994 were spent surveying peatlands in the vicinity of Priest Lake with habitats similar to those at Mosquito Bay Fen where Bursik found a single plant of *Tofieldia glutinosa* var. *absona* s.l. (*Triantha occidentalis* ssp. *brevistyla*) in 1993. No additional populations were found. Sites surveyed during 1994 included Upper Priest Lake Fen, Lee Lake Fen, Chase Lake Fen, Armstrong Meadows, and Dubius Creek Fen and others. The Conservation Data Center has been surveying likely habitat in Idaho panhandle peatlands since 1987 (see Bursik and Moseley 1995).

D. Knowledgeable individuals:

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E. Other information sources: none.

18. Summary of materials on file: All detailed field survey forms, historical information, and field maps on *Tofieldia glutinosa* var. *absona* s.l. are on file at Idaho Fish and Game's Conservation Data Center in Boise. All of this information will be contained within the file on *Triantha occidentalis* ssp. *brevistyla*. Refer only to the Priest Lake populations of this subspecies if interested in *T. glutinosa* var. *absona* s.l. Information on all other populations of *Triantha occidentalis* ssp. *brevistyla* are also on file at the Idaho Conservation Data Center.

IV. AUTHORSHIP.

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20. Maintenance of status report: Not applicable.

V. NEW INFORMATION.

21. Record of revisions: Not applicable.